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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,760	11/26/2003	Yasunori Kuratomi	Q77293	4179

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EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/721,760

Applicant(s)

KURATOMI, YASUNORI

Examiner

Rochelle Blackman

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 10, 14-16, 18, 21 and 33 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-4, 10, 14-16, 18, 21 and 33 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 11/26/03 & 02/22/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-4, 10, 14-16, 18, 21, and 33 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 10, 14-16, 18, 21, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al. (U.S. Patent No. 6,254,246) in view of Parker et al. (U.S. Patent Application Publication No. 2001/0053075).

Regarding claim 1, Tiao discloses a projection display (see FIGS. 2-9) comprising: an illumination module (200, 300, 400, 500, 700, 800, 900a-c); an optical modulator (212, 320, 750, 850, 910a-c) for modulating light incident from the illumination module in response to image data; and a projection optical system (930) for projecting light emitted from the optical modulator on an enlarged scale, wherein the illumination module comprises: a light tunnel (see 310, 822) having a light reflecting surface formed at the inner walls thereof; at least one light source (202, 302, 302a-c, 710, 810), disposed at a first end of the light tunnel, which radiates light; an optical

angle converter (see 208, 314, 522, 722', 830, 832) which changes a propagation angle of the light traveling in the light tunnel; and a selective transmission member (410, 510) disposed at a second end of the light tunnel, which transmits light emitted from the light guide having an angle within a predetermined range in which light can be effectively projected by the projection optical system and reflects light having an emission angle outside of the predetermined range.

Regarding claim 2, Tiao discloses wherein the light source includes a light emitting diode (204, 306, 712, 812).

Regarding claim 3, Tiao discloses wherein the light source includes a light emitting diode array (see 202, 302, 710, 810) on which a plurality of light emitting diodes (204, 306, 712, 812) are arranged.

Regarding claim 4, Tiao discloses wherein the light source includes an organic electro-luminescence device (see col. 3, lines 7-11).

Regarding claim 10, Tiao discloses wherein the optical angle converter is located at an end of the light tunnel on the opposite side of the light source (see 722' and 830, 832).

Regarding claims 14 and 21, Tiao discloses wherein the illumination module further comprises a polarization member (412, 512) which transmits only light having a polarization that can pass through the optical modulator and reflects other polarizations, when the optical modulator is a transmission-type optical device (see 212, 320, 750, 850, 910a-c) which permits only light having a predetermined polarization to pass therethrough.

Regarding claim 15, Tiao discloses wherein the polarization member is located on an output side of the selective transmission member (see location of 512).

Tiao does not appear to disclose the illumination module comprising the light tunnel in the form of a "hollow rectangular pipe", as recited in claim 1.

Parker teaches providing a light tunnel (see BL of FIGS. 1, 2, 21, and 24) in the form of a "hollow rectangular pipe"(see pg. 5, paragraph [0062]).

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the illumination module of the Tiao reference with a light tunnel in the form of a "hollow rectangular pipe", as taught by Parker since Parker teaches using a light tunnel of a hollow type is well known in the art.

Tiao does not appear to disclose the illumination module further comprising "a prism sheet on which a prism pattern whose apex is directed toward the optical modulator is formed, wherein the prism sheet is interposed between the light tunnel and the selective transmission member", as recited in claim 16; and an "anisotropic diffusion member interposed between the light tunnel and the prism sheet", as recited in claim 18.

Parker teaches providing a prism sheet (8) on which a prism pattern (5) whose apex is directed toward an optical modulator is formed, wherein the prism sheet is interposed between the light tunnel and a selective transmission member (30); an anisotropic diffusion member (30) interposed between the light tunnel and the prism sheet.

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the illumination module of the Tiao reference with "a prism sheet on which a prism pattern whose apex is directed toward the optical modulator is formed, wherein the prism sheet is interposed between the light tunnel and the selective transmission member" and an "anisotropic diffusion member interposed between the light tunnel and the prism sheet", as taught by Parker in order to provide a light directing film that redistributes more of the light emitted by the light source toward a direction normal to the plane of the film, thus producing a softer image without the brightness decrease associated with films that have a matte or diffuse finish on the light entrance surface of the films, for increased effectiveness (see pg. 1, paragraph [0009]).

Tiao does not appear to disclose the illumination module further comprising a "reflecting plate positioned proximate to the optical angle converter" as recited in claim 33.

Parker teaches providing a reflecting plate (40) positioned proximate to an optical angle converter (see bottom surface of light guide in FIG. 1).

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the illumination module of the Parker reference with a "reflecting plate", as taught by Tiao in order to reflect ambient light entering the display back out the display to increase the brightness of the display (see pg. 3, paragraph [0040]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER